

Authority E.O. 13526

By ED NARA Date 10-5-11

T I C O M N O T E S

I. A Study in Hegemony. A Review of the degree of coordination and liaison existing between German, and Japanese, Signal Intelligence Agencies prior to and during World War II.

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X                               TICOM NOTES                               X
X Under the direction of Mr William F. Friedman, Chief                X
X Communications Research Section, WDGAS-14, it is pro-                X
X posed to publish from time to time studies and sur-                  X
X veys of various phases of cryptological history based                 X
X on TICOM materials dealing with matters of general                   X
X and specific interest. These TICOM NOTES will sup-                   X
X plement the TICOM histories, European Axis Signal                   X
X Intelligence in World War II, ix vols., already issued,           X
X both revising those already published in the light                X
X of additional information, and will conduct research                  X
X on such additional cryptologic problems as can be                     X
X clarified from available sources.                                     X
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(D R A F T C O P Y)

Introduction

This paper proposes to review briefly the experiences of Germany and Japan in their several efforts in the field of communications intelligence to coordinate and direct the work of their various signal intelligence agencies. In both Germany and Japan each of the military services possessed its own signal intelligence agency as did the respective foreign offices. Germany, in addition to an Army, a Navy, and an Airforce Signal Intelligence Service and a Foreign Office "Cipher Bureau" had two other large organizations devoted to communications intelligence. These were a Nazi party rival of the mistrusted service agencies (Goering's "Research" Bureau), and a Signal Intelligence Agency of the High Command German Armed Forces. In Germany and Japan each service agency controlled a varying number of subordinate units (intercept units, field commands and the like) and all were equally jealous of their own independence, rivals in making the best "show", and frequently cannibalistically inclined at any fancied show of weakness by their sister organizations.

The conclusions drawn herein are based on the results of TICOM investigations carried out in Germany after VE day and in Japan after VJ day. A careful and detailed report on the history

¹ TICOM: The word TICOM served as a cover name for a special project and for an organization, the "Target Intelligence Committee" aimed at the investigation and exploitation of German cryptologic organizations, operations, installations, and personnel. A Joint and Combined "Target Intelligence Committee" was established in England in October 1944, by the authority of the Chief of Staff, United States Army; the Commander-in-Chief, United States Fleet; and the Chairman, London Sigint Board. A similar operation was prepared and conducted against the Japanese after their surrender.

and operations of the various German signal intelligence agencies has already been issued ² and a study of the Japanese agencies is in pre-

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European Axis Signal Intelligence in World War II as Revealed by "TICOM" Interrogations and Other Prisoner of War Interrogations and Captured Material, Principally German (WDGAS-14, Army Security Agency: 1 May 1946) ix vols. These volumes will be cited hereafter as EASIS in this paper. See the Bibliography for indication of the contents of the individual volumes.

paration³.

³ A listing of Japanese TICOM materials in ASA, including the team reports and interrogation reports of individual prisoners as well documents captured is given in the "Japanese TICOM File" (Army Security Agency, 30 June 1946). A study of Japanese successes against United States Army Communications is in preparation in AS-83.

A presentation of the considerable successes scored by all of these agencies in producing vital communications intelligence is not germane to the present discussion which is concerned solely with an analysis and critical evaluation of the failure by both nations to establish a single directive authority [hegemony] with sufficient prestige and power to coordinate the various agencies and secure a single, final, objective and integrated intelligence picture. It should be pointed out that in the case of Germany there are many examples of cooperation and liaison between the organizations at the operational level documented in TICOM which can not be duplicated in the case of Japan. Traditional service rivalries and the ambitions and jealousies of high ranking personages vitiated the dearly bought successes of communications intelligence in both Germany and Japan by preventing the exercise of an integrating and coordinating authority from the highest to the lowest levels of the intelligence effort.

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Part I : Germany

By the end of the war Nazi Germany had employed nearly 34,000 persons in communications intelligence. This figure may be compared with the estimated 28,000 employed by the United States Army⁴ and the

⁴ EASI vol I, p.7

~~and the~~ reported 30,000 employed by the British.⁵ In each case the

⁵ General George C. Marshall, Pearl Harbor Attack. Hearings of the Joint Committee on the Investigation of the Pearl Harbor Attack. Congress of the United States. 79th Congress. United States Government Printing Office, Washington, 1946. Part VIII P. 1147. For a tabulation of the employment of personnel by the United States Army, United States Navy and British in communications intelligence both in peacetime and in World War II see Appendix A.

greater number were employed in intercept units and field agencies. Yet, with a comparable expenditure of man power to that of either the United States or Great Britain the German results were far inferior. No high grade system of the United States or Britain was read by the Germans. Their entire effort was centered upon and their unquestioned successes came from exploitation of low level systems, traffic analysis, laxness in Anglo American security standards among operating units, and, in the case of certain United States State Department and Military Attache Systems, from physical compromise.

a. Historical Review of German Communications Intelligence Agencies.

The senior German signal intelligence service was that of the German Navy High Command, Oberkommando der Kriegsmarine 4 Seekriegsleitung III, abbreviated OKM/4 SKL/III. A communications intelligence service had existed in the German Navy during World War I and a small section of this organization managed to continue operations from 1918

until the personnel of OKM/4, SKL/III were taken prisoner in their working quarters at Flensburg by TICOM. There is no evidence that the German Navy cryptanalysts concerned themselves with any systems other than naval ones. They were occasionally able, however, to assist the other services with advice on related problems. The total German naval personnel, including field, is estimated to have been 3,500⁶.

⁶ EASI vol 1, pp-13-15; IF 210, German Naval Communications Intelligence (a report prepared by United States Navy TICOM); IF 268, ii, pp20-22 (written homework of Wilhelm Fenner, formerly principal cryptanalyst of the Signal Intelligence Agency of the High Command, German Armed Forces).

The second German cipher bureau in seniority was that of the German Foreign Office. The German Foreign Office maintained a small cryptanalytic organization within its communications division which went under the cover name of "Pers Z" (significance unknown). Pers Z included a cryptographic section, Pers Z/Chiffriersabteilung, which issued codes and ciphers for the use of the German Foreign Office and encoded and decoded all classified communications; a Telecommunications branch, Pers Z/TelKo, which maintained all German Foreign Office Telecommunications and transmitted all messages; and the cryptanalytic branch, Pers Z.S. (Sonderdienst or special service) which worked on foreign diplomatic systems. The head of Pers Z.S. and founder of the cryptanalytic section was a man by the name of Selchow (first name and whereabouts since VE day unknown) who had been a captain in the cipher section at Grand Headquarters of the Imperial Army during World War I. The German Foreign Office cryptanalytic section was organized by Selchow in 1919. Its greatest strength was around 200 persons although this number had fallen off considerably by the end of the war. The cryptanalytic section, Pers Z.S.

evacuated Berlin and were found by TICOM at Burgscheidungen. The records and archives of the organization and most of the cryptanalytic personnel were captured and evacuated from Burgscheidungen, which is in the Russian zone, to Marburg (to the north of Frankfurt in the United States zone). Some of the Germans were still in Marburg in August 1946.⁷

⁷ EASI vol. 1, pp 18-20, vol. vi; IF 268, ii, pp 25 f.

The Signal Intelligence Agency of the High Command, German Armed Forces (full German title Oberkommando der Wehrmacht/Wehrmacht Fuehrungsstab/Amtsgruppe Wehrmachtnachrichtenverbindung/Chiffriersabteilung, abbreviated OKW/WFSt/AgNW/Chi and commonly referred to as OKW/Chi or simply as "Chi" by its personnel) was the third German signal intelligence agency in age. From its position and through the ambition and ability of its leaders it took a leading role among the German agencies and was responsible for liaison with the signal intelligence services of Hungary, Austria, Finland, and Italy and dealt with Japanese military attaches in communications intelligence matters. This agency was founded in 1921 as the cipher section (Chiffriersabteilung) of the Reichswehrministerium and continued to grow in importance while the Reichswehrministerium changed to the Reichskriegsministerium and finally to the Oberkommando der Wehrmacht. (To avoid confusion this agency will be referred to as "The Signal Intelligence Agency of the High Command, German Armed Forces", its final title. It may be noted that HIGH Command is used in this paper in conformance with standard translations of Oberkommando, rather than "Supreme Command" used in the nine volume TICOM report on European Axis Signal Intelligence in World War II etc. Section "b" which follows will attempt to trace the labyrinthian chains of command

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to which this agency was bound during its career). Administratively within the Oberkommando der Wehrmacht, this agency was a section within the Armed Forces Signal Communications Group (AgWNV) of the Chief of Staff of the Armed Forces High Command (WFSt). The head of the Signal Intelligence Agency of the High Command, German Armed Forces was briefed by the head of the Foreign and Counter Intelligence Branch of the High Command, German Armed Forces (Amt Ausland und Abwehr), Admiral Canaris, and after the 20th of July (1944) Plot in which several high officials in the Armed Forces High Command were involved, by Walter Schellenberg, head of Amt VI of Himmler's Reich Main Security Agency (RSHA) which incorporated the Amt Ausland und Abwehr.

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⁸ For a description of AgWNV see EASI, vol. 8 chapter xi. For the chain of command and the various departments within OKW see IF 253, The German General Staff Corps, annexes 1e-12.

The Signal Intelligence Agency of the High Command, German Armed Forces was founded as a unit of the Abwehr (possibly as Abt 4). This subordination led to constant conflicts as cryptologic personnel were nominally on Abwehr rolls while the radio men were mostly Signal Corps (Nachrichtentruppen). In the small 100,000 man army allowed Germany by the terms of the Versailles treaty this was not too serious as everyone knew all others concerned. The creation of "T-3" (Truppenamt or "Troop Office", later redesignated as the German Army General Staff, ca. 1935) complicated the situation as T-3 claimed it alone had a right to the decodes produced. When, after the creation of Goering's "Research" Bureau, General Fellgiebel, the Chief Signal Officer of the High Command, German Armed Forces, wanted to free the Signal Intelligence Agency of the High Command, German Armed Forces from Abwehr he failed because the decodes were too valuable. However, in 1935, an arrangement was effected with Admiral Canaris, the head of the Abwehr, whereby the Abwehr continued to receive decodes but exercised no authority, the

Signal Intelligence Agency of the High Command, German Armed Forces being transferred to the Inspektion der Nachrichtentruppen Abteilung 7 by whom its pay and personnel had been handled since ca. 1938. Radio operators for the Signal Intelligence Agency of the High Command, German Armed Forces in its early years were recruited from the Signal Corps of the 100,000 man army. In 1924, six new intercept stations (designated as "fixed H stations") were established. They were directly subordinated to the Signal Intelligence Agency of the High Command German Armed Forces and were wrapped in great secrecy with their purpose known to only a minimum of officers. Administratively these intercept stations were subordinate to the Wehrkreis headquarters of the area in which they were located. They were staffed by 1 officer, the chief of the station, 1 radio mechanic, 18 to 20 NCOs and EM and 6 to 8 civilian employees. These units had no T/O of their own, their personnel being detached to them from signal battalions and signal platoons of the Infantry, Cavalry etc who had been engaged in intercept and signal intelligence work in connection with German army maneuvers. In 1932 the intercept stations were given their own T/O. Only the finest and most experienced radio operators of the signal battalions and platoons were accepted as intercept operators. The chief of an intercept station, by having the support of the Reichswehrministerium, was certain always to receive the best qualified personnel. In 1934 each intercept station had its own building outside of city limits in order to be free from electrical interference. By 1935 the first permanent SIS company was activated, for the greater part from Signal Corps recruits. The officers, NCOs and privates of the fixed intercept stations, who had built up experience in monitoring the Riff war ~~and~~, the occupation of the Rh neland and the Italian

conquest of Ethiopia (and were to further polish their techniques on the Anschluss, the Spanish Civil war - for which an SIS company of about 250 men was assigned to the Condor Legion - and the Munich crisis) served as instructors. In selecting the new military personnel no consideration was given to the individuals technical background; the only requirement was a certain degree of intelligence. Many difficulties resulted which had their repercussions throughout the entire German Signal Corps. The recruiting continued for about two years in order to bring the SIS companies up to strength. The lack of technically trained personnel, especially among the officers, remained one of the greatest deficiencies of German SIS units right up to the end of the war .⁹

⁹ IF 181, pp 9-10. This discussion of the early experiences of German Army SIS units and their connection to the Signal Intelligence Agency of the High Command, German Armed Forces, is taken from the testimony of a former German Signal Corps radio operator, Ferdinand Feichtner, later a Major in the German Air Force SIS. The subject has not been treated in the TICOM EASI volumes on OKW/Chi or OKH/Chi, the Signal Intelligence Agencies of the High Command German Armed Forces and ~~WGH/Command~~ German Army High Command respectively (Vols iii and iv).

The founder of the Signal Intelligence Agency of the High Command, German Armed Forces, was a (then) 1st Lt. Buschenhagen who had served as a liaison officer during the first world war at an Austro-Hungarian intercept station in the Tyrol. In the Autumn of 1921 he began recruiting the nucleus of a small cryptanalytic section for the Reichswehrministerium. Two of the first recruits had served as cryptanalysts in World War I, Nikolai Rohen (the head of the Anglo-American section of the Signal Intelligence Agency of the High Command German Armed Forces at the end of World War II)¹⁰

¹⁰ Rohen was questioned by TICOM in August 1946 in Berlin where he is currently employed as a gardner. He had been "over run " by the Russians but not questioned. His interrogation is I 199.

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and Heinrich Mueller, the last head of the French section. A former Russian cryptanalyst, Peter Novopaschenny, ex captain in the Czarist Navy, was employed by Buschenhagen. Novopaschenny appears to have been responsible for the first successes of the cipher ~~by~~ section in addition to organizing the work and training the personnel. He remained a member of the Signal Intelligence Agency of the High Command, German Armed Forces until the end of the war when all trace of his movements was lost. (It may be noted that he was known to French and British Intelligence in the 1920s and as a Czarist "emigre" is conceivably wanted by the Russians). One of Novopaschenny's first pupils, destined to become the leading civilian personality of the Signal Intelligence Agency of the High Command German Armed Forces was Wilhelm Fenner. Fenner had been an interpreter in the first world war and was recruited by Buschenhagen in 1921. He was personally responsible for liaison between his agency and the signal intelligence services of the other axis powers and became the guiding force in the cryptanalytic work of OKW/Chi until the end of the war. A recent (Fall of 1946) prisoner of TICOM, he is the source for much of the historical information now available on OKW/Chi, the Signal Intelligence Agency of the High Command German Armed Forces. Continuity with cryptanalytic progress in World War I was maintained, according to Fenner, through Novopaschenny's knowledge and through a lucky acquisition by Buschenhagen. In the course of a communist street riot in Berlin in 1921 Buschenhagen found, abandoned on the side walk, a part of the archives of the German Army cryptanalytic section in world war I. These documents were sorted and studied and proved invaluable for further operations. Buschenhagen's acquaintances among the members of the former Austro-Hungarian Intelligence Corps of Colonel Ronge assisted in the development of the new German agency. In 1923 the head of the

Hungarian Cipher Bureau (a section of the Hungarian War Ministry, HONVED) visited Berlin and entered into a working agreement with Buschenhagen. On his return from Kabina suggested to the Austrian Cipher Bureau (headed at the time by a Court Chancellor KLOB, another former member of Carl Ronge's Austro Hungarian Intelligence elite) that liaison between Germany and Austria would be profitable. (It is not known how soon after World War I Austria and Hungary resumed- if indeed relations were ever seriously severed by the divorce of Austria and Hungary - their, liaison on Intelligence matters but it is clear that a strong understanding existed in 1923). The liaison between the Signal Intelligence Agency of the High Command German Armed Forces and Hungary continued until members of the Hungarian Signal Intelligence Service crossed into Bavaria and vanished into the country side before the advance of the Red Army. Liaison with Austria continued until the Anschluss. In both cases intercepted traffic (from both cables and radio) and cryptanalytic results were exchanged. After the Anschluss the personnel of the Austrian bureau were employed by different German Agencies. In 1927 a Finnish contingent appeared in Berlin and requested assistance in signal intelligence matters. There does not appear to have been any previous association in cryptanalytic matters with the Finns but it is known that a high percentage of the officer corps of the Finnish Army had served in a Royal Prussian Jaeger Battalion in World War I and an appeal to Germany for assistance in organizing their new signal intelligence service is not surprising. (Liaison between the Germans and Finns continued from 1927 until the Russian-Finnish Armistice in 1945. There is evidence that the Signal Intelligence Agency of the High Command German Armed Forces even continued to cooperate with Finnish SIS during the Finnish-Russian "Winter War"

when such assistance had been forbidden by Hitler because of his agreement with Stalin.) From 1933 to 1939 the Signal Intelligence Agency of the High Command German Armed Forces encountered difficulties first through defection of some of its older workers to the newly created "Research" Bureau of Goering and resulting rivalry with the "Research" Bureau and Foreign Office Cipher Section over the proper mission of each agency and secondly by the creation in 1937 of a signal intelligence service for the German Army High Command which resulted in a further loss of trained workers and additional uncertainty as to assigned mission. During the war liaison with the Japanese in cryptanalytic matters was carried on through the Japanese Military attaches. A more reluctant exchange of information with the Italian Signal Intelligence Service (whose security the Germans mistrusted) was also carried out by the Signal Intelligence Agency of the High Command German Armed Forces. At its largest the Signal Intelligence Agency of the High Command German Armed Forces employed some 800 persons, not all of whom, however, were cryptanalysts. A part of the work of the Signal Intelligence Agency of the High Command German Armed Forces involved the intercept and processing of foreign press and news broadcasts (also carried out by Goering's "Research" Bureau, the Signal Intelligence Agency of the German Army High Command, the Signal Intelligence Agency of the German Air Force High Command, The Signal Intelligence Agency of the German Navy High Command and by a section of the German Foreign Office not a part of Pers Z inter alia).

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¹¹ For the history of the Signal Intelligence Agency of the High Command German Armed Forces see EASI vols 1 and iii and IF 268.

Immediately after the accession to power of the Nazi Party in 1933 Hitler instructed (or if Goering is to be believed, approved

Goering's suggestion) his paladin, Hermann Goering, to organize an intelligence agency on which the Party could rely vis a vis the already existing Foreign Office Cipher Section, the Signal Intelligence Agency of the High Command, German Armed Forces, and the Signal Intelligence Agency of the German Navy High Command. The immediate function of this agency, which was nominally a part of the German Air Ministry as a "Research" Bureau (Forschungsamt, abbreviated FA, or RLM/FA (Reichsluftfahrtministerium Forschungsamt) was telephone and telegraph monitoring although from the first cryptanalysis was involved. Dissatisfied cryptanalysts, headed by the later head of the "Research" Bureau, Gottfried Schapper, from the Signal Intelligence Agency of the High Command German Armed Forces, became leading figures in the new organization. This defection was resented by the Signal Intelligence Agency of the High Command German Armed Forces and the "Research" Bureau personnel in turn retained their dislike of their former organization and spared no pains to belittle its ability and usurp its functions. The impressions of the TICOM investigators of the bare half a dozen members of the "Research" Bureau who were questioned confirmed the often expressed opinions of members of the other German signal intelligence agencies that the leading personalities of the "Research" Bureau were an overly ambitious, unscrupulous, and unsavory lot. It is clear that the deserters from the Signal Intelligence Agency of the High Command German Armed Forces were mostly minor members of that organization and bitterly resentful of that fact. They are said to have been conspiratorial by nature and were mostly Nazi Party members who were rewarded for their party loyalties by employment at disproportionate salaries to their ability and to salaries in the other German agencies. The "Research" Bureau appears to have been the Nazi Party cryptologic agency and worked closely with Himmler and the Gestapo. While its

immediate function was telephone monitoring - and it appears to have been involved in the Nazi Party "Blood Purge" of Roehm and the Brown Shirts (Sturm Abteilungen, SA) in 1934 - and cryptanalysis it also engaged in a large scale press and news broadcast monitoring from which a large part of its information was derived. Significant of the apparent understanding between Goering and Himmler, however, is the fact that the "Research" Bureau never intruded into the employment of field of agents (a prerequisite of Himmler through the RSHA) while Himmler, to the surprise of his subordinates, did not interfere with the functions of the "Research" Bureau beyond arranging, and then not until 1944, that the telephone tapping of the "Research" Bureau should be coordinated with the Gestapo but with the actual operations left a part of the "Research" Bureau. (Perhaps this assumed "understanding" between Himmler and Goering accounts for the belief of personnel of the Signal Intelligence Agency of the High Command German Armed Forces that the "Research" Bureau attempted to take over their organization after the failure of the 20th of July Plot against Hitler. The Abwehr (Military Intelligence) was taken over by Himmler through his Reich Main Security Agency at this time because of the doubted loyalty of the officers in the High Command of the German Armed Forces. Actually the Head of the Signal Intelligence Agency of the High Command German Armed Forces, presumably because of the long standing feud between his organization and the "Research" Bureau, did put his agency under the protection of Himmler's organization). From what little may be inferred of the operations of the "Research" Bureau it seems probable that through Goering's Nazi Party funds were amply available to the "Research" Bureau with which it bought copies of various foreign codes to supplement its straight cryptanalysis. (An example would be the "ciphers of the Quai d'Orsay" which Goering admitted were "obtained" and which other

evidence revealed were read at the time of the Anschluss, permitting Hitler to proceed with the occupation secure in the knowledge that France would take no military action because Britain would not support it.)

The new organization, being filled with former minor employees of the Signal Intelligence Agency of the High Command German Armed Forces, attempted from the first to discredit the work of that organization and to take over all cryptanalysis of diplomatic systems, including those of military attaches. The "Research" Bureau entered into working agreement with the Foreign Office Cipher Section (who eventually came back to the Signal Intelligence Agency of the High Command German Armed Forces for assistance when the "Research" Bureau proved unsatisfactory) and is known to have worked with the Signal Intelligence Agencies of the German Navy High Command, the German Army High Command, and the German Air Force High Command. However, there was no cryptanalytic liaison between the "Research" Bureau and the Signal Intelligence Agency of the High Command German Armed Forces although the "Research" Bureau did supply the latter with approximately one third of its raw traffic. (A surprisingly high proportion of the intercept available to the Signal Intelligence Agency of the High Command German Armed Forces and presumably to the other German agencies came from land lines. The Germans complained that the start of the war and the consequent cutting of the numerous international telegraph and telephone lines which passed through Berlin - a ~~possibility~~ geographic advantage which notably assisted the Signal Intelligence Agency of the High Command German Armed Forces in its liaison with other European axis signal intelligence services - posed a severe handicap to their operations which radio intercept was never entirely able to make

up.) The Nazi "taint" of the "Research" Bureau and the secrecy in which its operations were veiled caused it to remain a separate power among the German cryptologic agencies rather than to become a fully cooperating partner. At its height the "Research" Bureau employed about 2000 persons of whom roughly one tenth were engaged¹² in cryptanalysis.

¹² EASI vol 7IF 268,ii,pp37-44 .

The Signal Intelligence Agency of the German Air Force High Command was founded in 1936 when Colonel (later General) Martini was commissioned to found a Luftwaffe Chi-stelle (Airforce cryptanalytic bureau) similar to the ones of the German Navy and High Command of the Armed Forces. As early as 1935 civilian employees of the Airforce had been sent to German Army SIS stations for training. An airforce officer and a civilian inspector who had been associated with the signal intelligence service during world war I, were transferred to the new cryptanalytic agency and immediately began to canvass for assistants among their old circle of acquaintances. After a rather small nucleus had been activated the German Air Force began independent intercept activities in the summer of 1936. Training of the radio operators was supervised by a small cadre obtained from the Reichswehr ~~signal intelligence service~~ signal intelligence service and in 1937 fixed German Air Force intercept stations under the cover name of "Weather Intercept Radio Receiving Stations (Wolleitstelle) were organized. On 1 January 1937 the cipher section (Chi-stelle) of AirForce HQ was organized as a part of the Air Ministry. It consisted of one officer, a technician, and 15 to 20 civilian employees and reported directly to the A-2 of the GAF General Staff. It should be noted that the German Airforce Cipher Section was composed of civilians and was responsible to the A-2 although under the

control of the Air Force Chief Signal Officer (Martini) as was the case with the Signal Intelligence Agency of the High Command German Armed Forces. As the probability of war increased it became necessary to expand the Air Force signal intelligence service and military personnel, assigned to the subordinate air commands as Airforce SIS regiments, intercept stations, and companies, were created. The presence of civilians in the Signal Intelligence Agency of the German Air Force High Command and military personnel in the SIS battalions led to decentralization and loss of influence by the Signal Intelligence Agency of the German Air Force High Command in the first years of the war and distrust of the "Chi-Stelle" by the cryptanalysts in the field units remained a constant factor impairing their relations. German Air Force SIS field personnel generally concur in criticizing the calibre of the employees of the Signal Intelligence Agency of the German Air Force High Command and in recriminations on the favoritism and prejudices displayed therein. The German Air Force SIS developed into a large and effective organization numbering some 13000 men which produced a large volume of valuable information for the A-2s not only from cryptanalysis (chiefly on the Eastern front) but also from traffic analysis and "study of every manifestation in the radio spectrum" in the west and south. It is perhaps significant that the civilian personnel of both cryptanalytic organizations responsible to Goering, the "Research" Bureau and the Signal Intelligence Agency of the German Air Force High Command (this last responsible to Goering in his position as Air Minister) are described as described as dubious characters of questionable morals, ~~selected~~ jealous of their own prerogatives and selected through favoritism rather than through professional competence. Though of no concern to the present paper this feature is a revealing side light on the sycophantic nature of the Nazi beauracracy.

13 EASI vol v; IF 179,180,181.

The Signal Intelligence Agency of the German Army High Command was created at the insistence of General von Brauchitsch in 1937. It was set up over the opposition of General Fellgiebel (Chief Signal Officer of the High Command German Armed Forces) and of the Signal Intelligence Agency of the High Command German Armed Forces who feared its creation would impair the efficiency of the latter organization. On its creation radio operators, some of the intercept stations, and a few cryptanalytic personnel of the Signal Intelligence Agency of the High Command German Armed Forces were taken over and the work of this organization on all military systems other than those of military attaches was assigned to the new agency. It appears probable, although direct evidence is not available, that the creation of an Army Signal Intelligence Service with its own Signal Intelligence Agency at this time is to be connected with the completion of training of SIS companies mentioned above and was ~~responsible~~ part of a high level plan also responsible for the creation of the Signal Intelligence Agency of the German Air Force High Command in this same year. Relations between the Signal Intelligence Agency of the German Army High Command and its parent organization the Signal Intelligence Agency of the High Command German Armed Forces remained strained for several years. This was attributed by the Signal Intelligence Agency of the High Command German Armed Forces to the first three commanding officers of the new organization, but by the outbreak of the war relations had improved markedly and during the war excellent cooperation existed. The Signal Intelligence Agency of the German Army High Command and its various field units totalled about 12000 men.

14 See EASI vol iv but cf chiefly IF 179,180 and 181.

The above agencies constituted the main German commitment on signal intelligence. Two subsidiary organizations, devoted to weather systems and enemy agents respectively, may be mentioned. The group

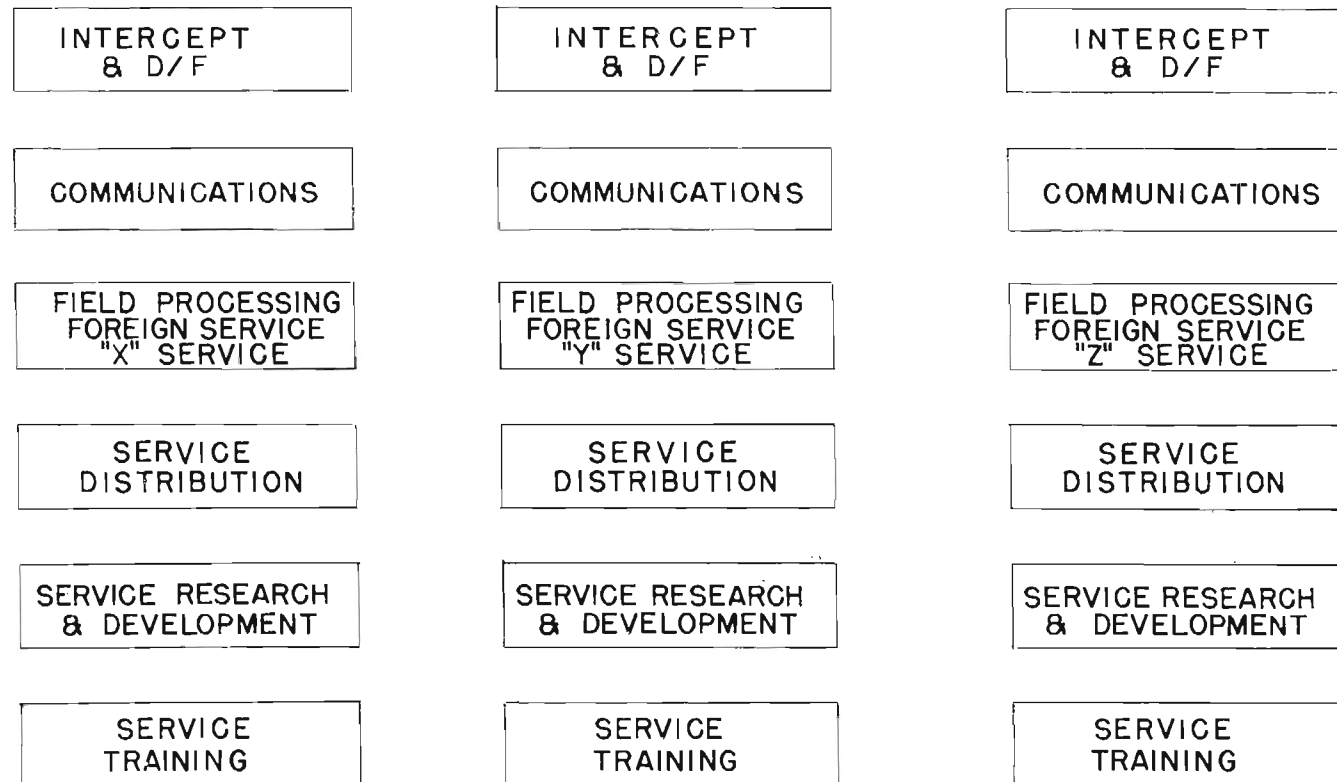
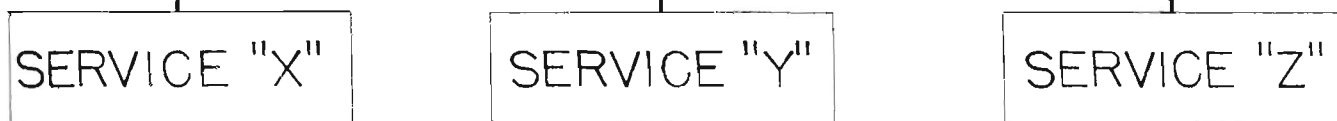
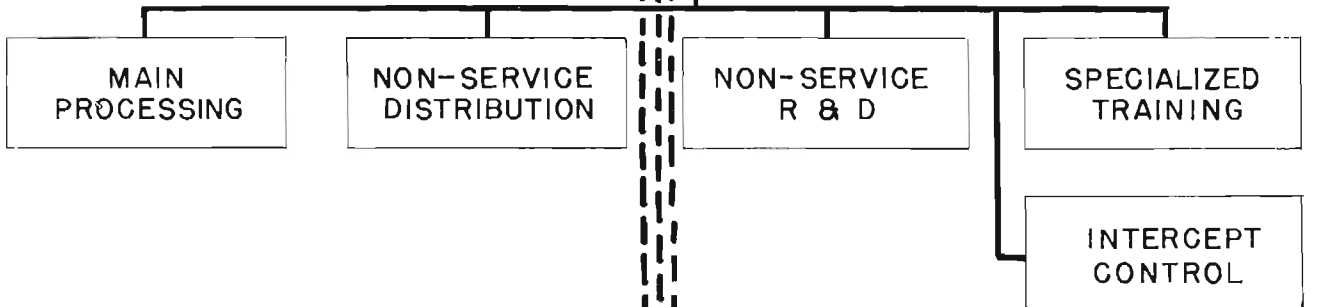
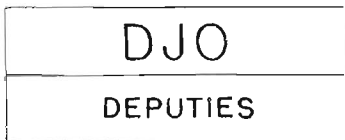
15 BASI vol viii chaps 9 and 11.

working on allied weather systems was a part of the German Meteorological Service (Reich Wetterdienst). It worked closely with the Signal Intelligence Agency of the German Air Force High Command and received occasional assistance in cryptanalytic problems from the Signal Intelligence Agency of the High Command German Armed Forces. The organization concerned with locating enemy agents by interceptioj and D/F of their radio transmissions was a part of the Armed Forces Signal Communications Group, Radio Security Section, employing some 2 500 men, chiefly in field companies. (The Signal Intelligence Agency of the High Command German Armed Forces was a separate section within the Armed Forces Signal Communications Group and assigned cryptanalysts to work on agents traffic for the Radik Security Section).

So far as is known neither the GESTAPo, the Elite Guards (SS), or the Reich Main Security Agency, all subordinate to Himmler, engaged in any independent cryptologic work of their own. The Reich Main Security Agency did engage in intercepting the transatlantic radio telephone circuits and received reports from the Hungarian Signal Intelligence Service, both activities in duplication of the Signal Intelligence Agency of the High Command German Armed Forces.

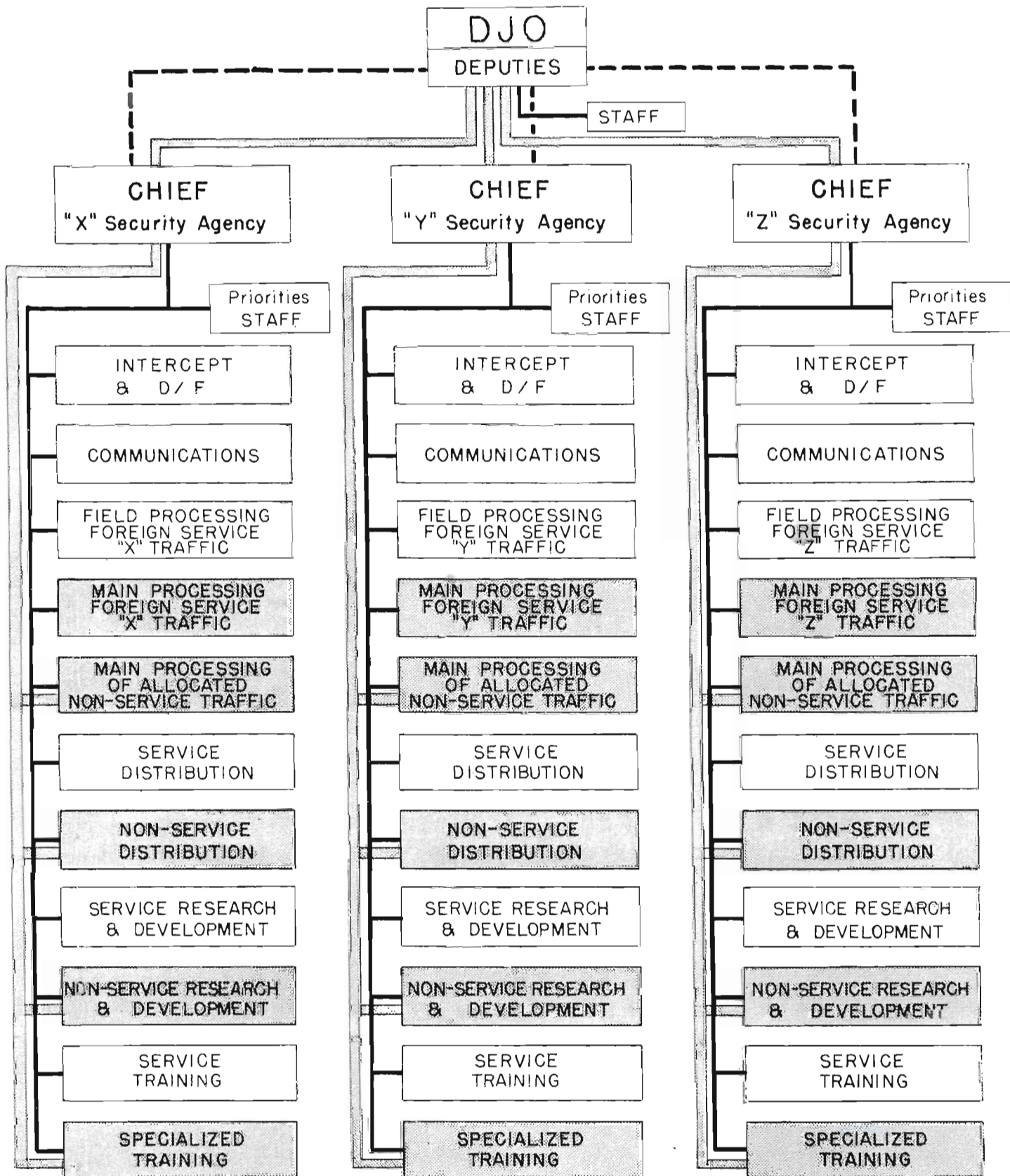
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